



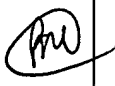
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,064	04/01/2004	Bruno Kristiaan Bernard De Man	127068-2	8882
6147	7590	01/09/2006	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309			SONG, HOON K	
			ART UNIT	PAPER NUMBER
			2882	

DATE MAILED: 01/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/816,064	DE MAN ET AL. 	
	Examiner	Art Unit	
	Hoon Song	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 November 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2,4-17,19-25,29,31-43 and 59-62 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3,18,26,27,30,45,46 and 49 is/are allowed.
- 6) ☒ Claim(s) 2,4,5,19,29,31 and 59-61 is/are rejected.
- 7) ☒ Claim(s) 6-17,20-25,32-43 and 62 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “carbon-based emitter”, “photo emitters”, “ferroelectric emitters”, “cold-cathode emitters”, “laser diodes” and “monolithic semiconductors” as claimed in independent claim 1; “at least one stationary detector comprising a plurality of detector elements of more than one sizes” as claimed in claim 3 and 30; “full ring sources including at least one of a rectangle, a square, an ellipse and an oval configuration” as claimed in claim 5 and “at least two stationary detectors extending generally around at least portion of an image volume” as claimed in claim 61 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to under 37 CFR 1.83(a) because they fail to show an x-ray source having “laser diodes”, “photo emitters” or “monolithic semiconductors” as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet,

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and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 20 and 62 are objected to because of the following informalities:

In claim 20 at line 1, delete "line sources".

In claim 62 line 1, "claim 62" should read --claim 61--.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2, 29, 59-61 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhou et al. (US 2002/0094064A1).

Regarding claims 2, 29 and 59-60, Zhou teaches a volumetric stationary CT system comprising:

at least one stationary detector (408) comprising elements having varying resolution (two dimensional detector) and forming the at least one stationary detector (408) extending generally around at least a portion of an imaging volume;

at least one stationary distributed X-ray source (404) placed proximal to the at least one stationary detector (408) (figure 3); and

a source controller for triggering one or more emitters in the at least one stationary distributed x-ray source for acquiring volumetric data by the at least one stationary detector,

wherein the at least one stationary detector (408) and the at least one stationary distributed X-ray source (404) are configured to cooperate to contribute towards mathematical completeness (360° scanning) of acquired volumetric data for image reconstruction, and

wherein the one or more emitters comprises cold cathode emitters (paragraph [0039]).

Regarding claim 61, Zhou teaches a volumetric stationary CT system comprising:

at least two stationary detectors (rows of the two dimensional detector 408) extending generally around at least a portion of an imaging volume;

at least one stationary distributed X-ray source (404) placed proximal to the at least one stationary detector; and

a source controller for triggering one or more emitters (402) in the at least one stationary distributed x-ray source for acquiring volumetric data by the at least two stationary detectors,

wherein the at least two stationary detectors and the at least one stationary distributed x-ray source are configured to cooperate to contribute towards mathematical completeness of acquired volumetric data for image reconstruction (figure 4).

Claims 4-5 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Burke et al. (US 5438605).

Regarding claims 4 and 31, Burke teaches a volumetric stationary CT system comprising:

at least one stationary detector extending generally around at least a portion of an imaging volume;

at least one stationary distributed X-ray source (12) placed proximal to the at least one stationary detector (figure 1); and

a source controller for triggering one or more emitters in the at least one stationary distributed x-ray source for acquiring volumetric data by the at least one stationary detector,

wherein the at least one stationary detector and the at least one stationary distributed X-ray source are configured to cooperate to contribute towards mathematical completeness (360° scanning) of acquired volumetric data for image reconstruction, and

wherein the at least one stationary distributed X-ray source includes at least two full ring sources (12, 12' and 12", figure 7).

Regarding claim 5, Burke teaches the at least two full ring sources include a circle configuration (figure 3).

Claim 19 is rejected under 35 U.S.C. 102(b) as being anticipated by Flohr (US 5654995).

Regarding claim 19, Flohr teaches a volumetric stationary CT system comprising:

At least one stationary ring detector (10) extending generally around at least a portion of an imaging volume;

One or more partial ring sources (2) flanking the stationary ring detector on alternating sides of the stationary ring detector (10) and configured to emit radiation toward the ring detector (10); and

A source controller for triggering one or more emitters (6) in the one or more partial ring sources for acquiring volumetric data by at least one stationary ring detector, wherein the at least one stationary ring detector and the one or more partial ring sources are configured to cooperate to contribute towards completeness of acquired volumetric data for image reconstruction (figure 1).

***Allowable Subject Matter***

Claims 3, 18, 26-27, 30, 45-46 and 49 allowed over prior art.

Claims 6-17, 20-25, 32-43 and 62 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 3 and 30, the prior art fails to teach at least one stationary detector comprising a plurality of detector elements of more than one sizes as claimed in independent claims 3 and 30.

Regarding claims 6-7, the prior art fails to teach the at least one stationary detector includes a pair of ring detectors and wherein at least one ring source of the one or more full ring sources is positioned between the pair of ring detectors as claimed in dependent claim 6.

Regarding claims 8-15 the prior art fails to teach the at least one stationary detector includes one or more ring detectors placed between two or more ring sources as claimed in dependent claim 8.

Regarding claim 16, the prior art fails to teach one or more partial ring sources and wherein the at least one stationary detector includes one or more ring detectors positioned between two or more ring sources and includes the one or more partial ring sources as claimed in dependent claim 16.

Regarding claim 17, the prior art fails to teach the at least one stationary detector includes one or more ring detectors positioned between two or more ring sources, wherein the one or more ring detectors and the two or more ring sources comprise different diameters for permitting a telescoping movement of the one or more ring detectors with the two or more ring sources as claimed in dependent claim 17.

Regarding claim 20, the prior art fails to teach one or more line sources extending at least along a Z-direction to increase mathematical completeness in acquired volumetric data for image reconstruction as claimed in dependent claim 20.



Regarding claims 21-25, the prior art fails to teach the at least one stationary distributed X-ray source includes one or more partial ring sources and wherein the at least one stationary detector includes one or more notched detectors as claimed in dependent claim 21.

Regarding claims 26-27, the prior art fails to teach the at least one stationary detector includes a helical detector, and wherein the at least one stationary distributed X-ray source includes a helical source placed adjacent to the helical detector as claimed in independent claim 26.

Regarding claims 32 and 33, the prior art fails to teach the at least one stationary detector includes a pair of ring detectors and wherein at least one ring source of the one or more full ring sources is positioned between the pair of ring detectors.

Regarding claims 34-37, the prior art fails to teach the at least one stationary detector includes one or more ring detectors placed between two or more ring sources as claimed in dependent claim 34.

Regarding claim 38, the prior art fails to teach one or more partial ring sources and wherein the at least one stationary detector includes one or more ring detectors positioned between two or more ring sources and includes one or more partial ring sources as claimed in dependent claim 38.

Regarding claim 39, the prior art fails to teach the at least one stationary detector includes one or more ring detectors positioned between two or more ring sources, wherein the one or more ring detectors and the two or more ring sources comprise different diameters for permitting a telescoping movement of the one or more ring

detectors with the two or more ring sources.

Regarding claim 40, the prior art fails to teach one or more line sources extending at least along a Z-direction to increase completeness in acquired data for image reconstruction as claimed in dependent claim 40.

Regarding claim 41, the prior art fails to teach the at least one stationary detector includes a ring detector and wherein the at least one stationary distributed X-ray source includes one or more partial ring sources flanking the ring detector on alternating sides of the ring detector and configured to emit radiation toward the ring detector as claimed in dependent claim 41.

Regarding claim 42, the prior art fails to teach the at least one stationary distributed X-ray source includes one or more partial ring sources and wherein the at least one stationary detector includes one or more notched detectors as claimed in dependent claim 42.

Regarding claim 43, the prior art fails to teach the at least one stationary detector includes a helical detector, and wherein the at least one stationary distributed X-ray source includes a helical source placed adjacent to the helical detector as claimed in dependent claim 43.

Regarding claim 45, the prior art fails to teach a method of measuring additional data by employing line sources as claimed in independent claim 45.

Regarding claims 46 and 49, the prior art fails to teach providing one or more ring detectors placed between two or more ring sources as claimed in independent claim 46.

Regarding claim 62, the prior art fails to teach one or more line sources extending at least along a Z-direction to increase mathematical completeness in acquired volumetric data for image reconstruction as claimed in dependent claim 62.

***Response to Arguments***

Applicant's arguments with respect to claims 2, 4-5, 19, 29, 31 and 59-61 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon Song whose telephone number is (571) 272-2494. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Glick can be reached on (571) 272 - 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HKS

12/29/08  
HKS



DAVID V. BRUCE  
PRIMARY EXAMINER